

Application No. 09/888,727

Reply to Office Action mailed October 8, 2003

REMARKS

By Office Action mailed October 8, 2003, pending claims 1-12 and 25-32 stand rejected, reconsideration of which is respectfully requested in view of the above amendments and following remarks. Claim 1 has been amended. Claims 2-12 and 25-32 have been cancelled. Claims 13-24 have been withdrawn by the Examiner in response to Applicant's provisional election on February 13, 2002, and are canceled by way of this Amendment. New claims 33-34 have been added. Claims 1 and 33-34 are now pending.

Amendments to the Specification

As an initial matter, Applicants have amended the specification to add the two new paragraphs set forth above. The first new paragraph merely copies the text of claim 1 and 4-8, as originally filed, into the specification. The second new paragraph merely copies the text of claims 11 and 12, as originally filed, into the specification. No new matter has been added by way of these two new paragraphs.

Amendments to the Claims

As set forth above, Applicants have amended claim 1, cancelled claims 2-32 and added new claims 33-34. Support for the amendments to claim 1 and new claims 33-34 may be found generally throughout the specification, and in particular, in Figure 1 and the corresponding description of such Figure in paragraphs [0009] and [0010]. Again, Applicants submit that no new matter has been added by way of these amendments and new claims.

Restriction Requirement

The Examiner has entered a three-way Restriction Requirement; namely, Group I -- claims 1-12 and 25-32 drawn to a method of fluid handling requiring a fluid sheath, Group II -- claims 13-14 and 17-21 drawn to a multi-flow apparatus, and Group III -- claims 15-16 and 22-24 drawn to a non-sheathed multi-flow system. Applicants hereby affirm the provisional election made February 13, 2002, without traverse, of the Group I claims for examination at this time. Accordingly, Applicants have canceled the Group II and III claims. Of course, Applicants

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reserve the right to continue prosecution of the canceled subject matter in one or more divisional applications.

Rejections Under 35 U.S.C. §102(e)

Claims 1-12 and 25-32 stand rejected under 35 U.S.C. §102(e) as anticipated by Yager et al. (U.S. Patent No. 5,932,100), Weigl et al. (U.S. Patent No. 6,159,739), Holl et al. (U.S. Patent No. 6,576,194), or Weigl et al. (U.S. Patent No. 6,454,945). More specifically, the Examiner states that these references all teach methods of controlling a flow of a first fluid that is sheathed by the flow of a second fluid and that it is inherent that all of these systems are three-dimensional and meet the claimed limitation for 3 dimensional flow.

Applicants respectfully submit that in light of the above amendments to pending claim 1, these grounds of rejection have been overcome. In particular, pending claim 1 as amended, is directed to a method of controlling the flow rate of a fluid sample flowing through a microfluidic channel comprising sheathing the fluid sample within *a center region* of a second fluid flowing through the microfluidic channel, wherein:

- (1) the second fluid *completely surrounds*, and is in contact with, the fluid sample at an interface between the second fluid and the fluid sample;
- (2) the flow rate of the fluid sample *is constant across the center region*; and
- (3) the flow rate of the fluid sample is substantially equal to the flow rate of the second fluid at the interface between the second fluid and the fluid sample. (Emphasis added.)

Although the four references cited by the Examiner disclose methods comprising the laminar flow of fluids through microfluidic channels, none of such references disclose a method for controlling the flow rate of a fluid sample comprising all of the foregoing elements, as recited in pending claim 1. In particular, none of the cited references disclose a method wherein the flow rate of a fluid sample, which is completely sheathed by a second fluid, is constant across the fluid sample.

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In view of the foregoing, Applicants respectfully submit that none of the foregoing four references, disclose every element of pending claim 1, as amended, nor do any of such references contain any teaching or suggestion to modify the methods disclosed therein in order to produce a method comprising every element of pending claim 1. Accordingly, Applicants respectfully request that these grounds of rejection be withdrawn.

Rejections Under 35 U.S.C. §102(b)

Claims 1-12 and 25-32 stand rejected under 35 U.S.C. §102(b) as anticipated by van den Engh et al. (U.S. Patent No. 5,747,349), Miyake et al. (U.S. Patent No. 4,863,264), or Ohki (U.S. Patent No. 4,983,038) for the reasons set forth on pages 4-5 of the Office Action.

For the same reasons as set forth above, with respect to the rejections under 35 U.S.C. §102(e), Applicants submit that in light of the amendments to pending claim 1, these grounds of rejection have been overcome. Again, although the three references cited by the Examiner disclose methods comprising the laminar flow of fluids through microfluidic channels, none of such references disclose a method for controlling the flow rate of a fluid sample, wherein the flow rate of the fluid sample, which is completely sheathed by a second fluid, is constant across the fluid sample.

Accordingly, Applicants respectfully submit that none of the foregoing three references, disclose every element of pending claim 1, as amended, nor do any of such references contain any teaching or suggestion to modify the methods disclosed therein in order to produce a method comprising every element of pending claim 1. Accordingly, Applicants respectfully request that these grounds of rejection be withdrawn as well.

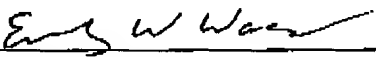
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In view of the above amendment and remarks, allowance of claims 1 and 33-34 is respectfully requested. A good faith effort has been made to place this application in condition for allowance. However, should any further issue require attention prior to allowance, the Examiner is requested to contact the undersigned at (206) 622-4900 to resolve the same. Furthermore, the Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

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